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EXAMINER
SIEDLER, DOROTHY S

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>17 July 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-10</u> is/are pending in the application.

    4a) Of the above claim(s) <u>4 and 6-8</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-3,5,9 and 19</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>20 October 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

This action is in response to the amendment filled July 17, 2007. Claims 1-10 are

pending with claims 4 and 6-8 canceled, and claims 1,2,3,9 and 10 amended.

Response to Arguments

1.   The examiner has considered applicant's argument with respect to the objection

of claim 1, and as such the objection is withdrawn.

2.   Applicant has successfully amended claim 3, and as such the objection is

withdrawn.

        Applicant's arguments filed July 17, 2007 have been fully considered but they are

not persuasive.

3.   In response to applicant's argument that the references fail to show certain

features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., that an environment is not determined based on actual noise (Remarks page 8))

are not recited in the rejected claim(s). Although the claims are interpreted in light of

the specification, limitations from the specification are not read into the claims. See *In*

re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4.   Applicant asserts that, "the subject matter...as recited as the amended

independent claims 1,9 and 10 herein, is neither disclosed not suggested by Stifelman."

(Remarks page 7). Applicant also asserts that, "as defined by the amended independent

claims 1,9 and 10 of the present application, an environment evaluation value is

calculated on positional information and environmental information, but an environment

is not determined based on actual noise, as in Stifelman. "(Remarks page 8). However, the examiner respectfully disagrees. As noted above, the argument that, "an environment is not determined based on actual noise", is not recited in the claims, and is therefore not considered. *Stifelman* discloses a system for voice control through an audio user interface (column 1 lines 25-32). The system enables user barge-in during system feedback by adjusting a "barge-in threshold". The system gathers environmental information, determines the type of environment based on that information and adjusts the barge-in threshold accordingly. If the environment is a low match environment, i.e. the input is not recognized, then the barge-in is considered non-effective, and a fall-back error correction routine is entered. For example, *Stifelman* discloses, "At step 534, the fall-back entry flag is set provided some information is received in the audio signal that indicates a low match environment is present. For instance, if the background noise of the call is too high, e.g. above a predetermined threshold, then a noisy environment can be detected" Therefore, *Stifelman* calculates an environmental evaluation and determines the barge-in function non-effective where the value exceeds a specific threshold. *Stifelman* does not disclose determining position information as part of an environmental evaluation, however the examiner argued that determining position information is old and well known. *Smith* (6,952,672) is presented as documentary evidence. *Smith* discloses a system for the adjustment of operational characteristics of a voice enabled personal communication device (column 2 lines 15-20). *Smith* detects the position of the user in relation to the personal communication device, and generates

proximity data corresponding to the detected location. That proximity data is then used

to adjust system parameters (column 2 lines 15-32).

Claim Objections

5.   Claim 9 is objected to because of the following informalities: Claim 9 recites,

"Recognizing contents of a voice contained in the processed, output, after the input

voice signal...etc.". The examiner considers the commas around 'output' to be a

typographical error.   Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6.   Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in

the relevant art that the inventor(s), at the time the application was filed, had possession

of the claimed invention. Claim 3 recites, " and the barge-in function is set to be non-

effective in the case where the signal to noise ratio of the voice signal exceeds a

predetermined threshold value", however this is contrary to the specification. The

specification discloses, "the case where the s/n ratio does not exceed the

predetermined threshold value,..the barge-in determining part 142 determines that the

barge-in function should be set to be non-effective". Clarification is requested.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,2,5,9 and 10 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Strom** ("Intelligent barge-in in conversational systems" IEEE 2000) in

view of **Stifelman** (7,143,039), and further in view of **Smith** (6,952,672).

7.   As per claim 1, **Storm** discloses a voice interactive system, comprising:

An acoustic processing part performing acoustic signal processing with respect

to an input voice signal (page 652, section 1. Introduction, last paragraph, *a barge-in is*

detected based on short-term acoustic measurements);

A voice recognizing part recognizing contents of a voice contained in the voice signal after being subjected to the acoustic signal processing (page 652, section 1. Introduction, last paragraph, *verification of the barge-in is performed using the confidence measure from the speech recognizer*);

A voice interacting part transmitting information to a user through a voice output or a combination of the voice output and another information transmission unit based on the contents of the voice (page 654, section 5. Declining Barge-in, *the system uses pre-emphasis and increasing of the loudness of the system output to indicate to the user that a barge-in was not allowed (non-effective)*); and

A barge-in control part having a barge-in function of suspending transmission of information by an input or an output of the acoustic processing part or an input signal from an external input in the course of transmission of information (page 653, section 3. Verification, *the detection of a barge-in, which determines if the system output is turned off or not, is detected by comparing the recognition confidence score to a threshold*), wherein:

The barge-in control part detects one or more feature values from an input or an output of the acoustic processing part, or an input signal from the external input, and determines whether or not the barge-in function is set to be effective based on the one or more feature values (page 653, section 3. Verification, *the detection of a barge-in, which determines if the system output is turned off or not, is detected by comparing the recognition confidence score to a threshold*).

However, **Storm** does not disclose wherein the one or more feature values includes positional information of the user detected from the input signal from the external input, and wherein the barge-in control part calculates an environment evaluation value of a position of the user, based on the positional information and environment information on the position, and determines the barge-in function to be non-effective in a case where the environment evaluation value exceeds a predetermined threshold value. **Stifelman** discloses a system that calculates an environmental evaluation value and determines the barge-in function to be non-effective in a case where the environment evaluation value exceeds a predetermined threshold (column 23 lines 4-45 and column 24 lines 32-37). **Stifelman** receives an audio signal and determines if a noisy environment exists (environmental information), for example if background noise exceeds a predetermined threshold. If the background noise exceeds a predetermined threshold, the barge-in was not accepted and a fall-back flag is set, sending the system into an error-recovery routine.

Stifelman does not disclose wherein the one or more feature values include positional information of the user detected from the input signal from the external input. **Smith** discloses a system for the adjustment of operational characteristics of a voice enabled personal communication device, where the adjustment is based on positional information (column 2 lines 15-20). **Smith** detects the position of the user in relation to the personal communication device, and generates proximity data corresponding to the detected location. That proximity data is then used to adjust system parameters (column 2 lines 15-32).

Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention to have the barge-in control part calculate an environment evaluation

value of a position of the user based on the environmental information on the position,

and determine the barge-in function to be non-effective in a case where the

environment evaluation value exceeds a predetermined threshold value in *Storm*, since

it would enable the system to adjust a barge-in threshold, causing an adjustment of the

system's sensitivity to problems, as indicated in *Stifelman* (column 23 lines 57-63).

It would also have been obvious to one of ordinary skill in the art at the time of

the invention to have one or more feature values include positional information of the

user detected from the input signal from the external input, as well as have the barge-in

control part calculate an environment evaluation value of a position of the user, based

on the positional information and environment information on the position in *Storm*,

since it would enable the system to adjust operational characteristics relating to input

audio signals, as well as output audio signals. These characteristics would then be used

to determine appropriate signal processing techniques, which could then be used to

distinguish desirable portions of the received audio signal from background noise,

thereby increasing the signal to noise ratio, as indicated in *Smith* (column 2 lines 15-

32).

8.   As per claim 2, *Strom* in view of *Stifelman*, further in view of *Smith* disclose the

voice interactive system according to claim 1, however *Strom* does not explicitly state

wherein the one or more feature values further includes a noise feature value, and the

barge-in function is set to be non-effective in a case where the noise feature value

exceeds a predetermined threshold value. However, *Storm* does disclose that

verification is performed on an input signal to determine if the audio is a user utterance,

background noise or non-speech sound such as a cough (page 653, section 3.

Verification, first paragraph). In addition, *Stifelman* discloses detecting noise and

comparing it to a predetermined threshold (column 24 lines 34-37). When the noise

exceeds the predetermined threshold value, a fall back flag is set, which indicates voice

recognition errors and a non-effective barge-in. *Strom* and *Stifelman* both disclose

systems to prevent falsely triggered barge-ins, and are thus analogous art.

Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention to use a noise feature value, and have the barge-in function set to be

non-effective in a case where the noise feature value exceeds a predetermined

threshold value in *Strom*, since it would enable the system to distinguish between

noise, or other audible signals, and a user utterance, thus preventing the system from

needlessly interrupting the delivery of content, as indicated in *Stifelman* (column 19

lines 26-29 and column 23 lines 24-27).

9.   As per claim 5, *Strom* in view of *Stifelman*, further in view of *Smith* disclose the

voice interactive system according to claim 1, and *Strom* further discloses wherein the

voice interacting part notifies the user of an effective/non-effective state of the barge-in

function using at least one of a voice and another information transmission unit (page

654, section 5. Declining Barge-in, *the system uses pre-emphasis and increasing of the*

loudness of the system output to indicate to the user that a barge-in was not allowed

(non-effective)).

10.   As per claim 9, this claim contains limitations similar to those found in claim 1,

and is therefore rejected for similar reasons.

11.   As per claim 10, this claim contains limitations similar to those found in claim 1,

and is therefore rejected for similar reasons.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dorothy Sarah Siedler whose telephone number is 571-

270-1067. The examiner can normally be reached on Mon-Thur 9:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

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DSS

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SUPERVISORY PATENT EXAMINER